

Terror management  
and the role of leaders on public attitudes:  
Instilling fear versus tolerance

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## Table of contents

Abstract .....	3
Introduction .....	4
Fear, leadership and the control of worldview .....	5
The impact of fear and leadership on prejudice vs. tolerance of the outgroup .....	5
Terror management theory and links to prejudice .....	6
9/11 and President Bush: Fear versus tolerance .....	9
The Present study .....	11
Method .....	13
Participants .....	13
Procedure .....	13
Measures .....	14
Results .....	17
Discussion .....	20
TMT and the present study .....	21
Proximal and distal defences .....	21
Fear .....	25
Impact of the Leader .....	25
Social Dominance Orientation .....	26
GNAT .....	27
Caveats .....	28
Future Directions .....	29
Final Remarks .....	31
References .....	32
Appendix A .....	40
Appendix B .....	44

### Table of tables

Table 1 Means and standard deviations of the Fear and the Hostility PANAS-X subscales...	18
Table 2 Overall d'prime for the Muslim and the American pairings .....	19
Table 3 t-test exploring the relationship between the pairings .....	19

### Table of figures

Figure 1 Muslim and American pairings .....	19
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### Abstract

Fear may contribute to prolonged conflicts, for example, between nations or political parties, by strengthening intergroup prejudice. The purpose of the present study was to explore ways to reduce fear in a context of terrorism and conflict. Undergraduate students participated in an experimental study of the role of a political leader in influencing fear, and the consequences for prejudice. Participants in the two experimental conditions were first induced to feel fear through the 9/11 events via a Terror Management Theory paradigm (Landau et al., 2004), then watched the President deliver a speech designed to either increase or decrease fear of terrorism. A control group performed comparable tasks that were, however, unrelated to 9/11. To investigate the subsequent effects of the speech manipulation on prejudice, all participants subsequently completed explicit and implicit measures of prejudice. Analysis showed no significant differences on the prejudice measures between the groups. This can largely be attributed to methodological difficulties of inducing fear in a lab setting and the liberal values known to characterize the participant group. Explanations and implications of these results are discussed, and caveats and directions for future research are suggested.

*Key words:* fear; tolerance; prejudice; conflict; war; TMT; 9/11; leader.

## Introduction

Throughout history, the world has witnessed the tragedy of bloody civil wars and far reaching crusades. Today, the peril of war resides not only in the length of battle and involvement of multiple nations, but in a new aspect: a strong linkage to international terrorist networks. The existence of and attention given to these networks have led to a perceived threat that an attack may strike anywhere at any time. As a result, terrorism is a common source of existential terror and uncertainty. The overarching goals of the present study were to explore the consequences of real-world terrorism events (9/11) on fear and prejudice, and importantly, how communication from a national leader about the importance of tolerance might mitigate the tendency to derogate perceived threatening out-groups after being reminded of one's own mortality.

When an individual is confronted with existential threat and uncertainty, fear is a natural, even functional, reaction (Bar-Tal, 2001), however, it ceases to be adaptive when the immediate threat is removed. Fear is described by Bar-Tal (2001) as an automatic reaction linked to both the present and the past. He argues that people in societies with high levels of conflict have a heightened tendency to experience fear, and may orient their life around this fear. When dominated by fear, the individual has an inclination to freeze beliefs, become more conservative and aggressive, and feel surrounded by a seemingly uncontrollable world. All of this may ultimately generate a tendency toward pessimism (Lerner & Keltner, 2001). Importantly, fear elicited by war or related conflict is commonly expressed through prejudice (Stephan & Stephan, 1996). This combination of fear and prejudice may not only lead to activation of robust cognitive and motivational processes which serve to sustain the conflict, the mechanisms and effects of group dynamics may also be accentuated (Hewstone, Rubin & Willis, 2002; Lord, Ross & Lepper, 1979; Rouhana & Bar-Tal, 1998; Skitka, Bauman & Mullen, 2004). Thus, according to Duckitt (1989) the feeling of threat increases one's desire for group cohesion, submission to in-group authority, and hostility towards outgroups. In this context, fear may take on a life of its own, not only as a consequence of conflict, but also a contributor to its violent escalations (McGregor, Lieberman, Greenberg, Solomon, Arndt, Simon & Pyszczynski, 1998). As a result of this negative feedback loop, fear, terror, and war become connected in people's minds (Tønnesson, 2005), and fear may come to direct one's understanding and interpretation of the world. The vulnerability entailed by this highly emotional connection means that the media and political and intellectual elites play an important role in directing people's responses to threat, and perceptions of other groups

potentially perceived as dangerous (Marcus, Sullivan, Theiss-Morse & Wood, 1995). In other words, leaders are critical to shaping the fear that arises out of the threat of terrorism and war.

*Fear, leadership and the control of worldview*

Lewin (1948) considered leadership to be crucial to the group atmosphere, an atmosphere which ultimately might provide the leader with the means to exploit fear in order to advance political interests. Leaders are often sources of epistemic authority, affecting worldview and emotional orientation (Anastasio, Rose & Chapman, 1999; Bar-Tal, 2001; Cohen, Ogilvie, Solomon, Greenberg & Pyszczynski, 2005; Lerner & Gonzales, 2005; Marcus et al., 1995; Pyszczynski, Greenberg & Solomon, 1999). Consequently, Lerner and Gonzales (2005) proposed that individuals who feel they lack control may be particularly influenced by those they are accountable to in a given context – the leader. This leader is left with a powerful capacity to define and interpret the world, and in combination with opportunities afforded by the media, individuals in a vulnerable state will often accept the interpretation in part or in whole.

However, trusting a reality constructed by the leader can create a need to rationalise and internalise the leader's worldview in order to avoid the dissonance created by putting aside one's own interpretation of reality (Festinger, 1957). This only serves to strengthen conviction in the reality provided by the leader. Thus, a high level of fear in a context of violent conflict makes political flexibility as well as creative and positive negotiation outcomes less likely (Isen, Daubman & Nowicki, 1987; Rouhana & Bar-Tal, 1998). Exploitation of fear for political purposes may therefore be facilitated (Cohen et al., 2005; Corradi, 1992), and may in turn increase acceptance of war policy, military actions, atrocities and suspension of civil liberties.

*The impact of fear and leadership on prejudice vs. tolerance of the outgroup*

Both individual and intergroup approaches have been used to create positive liking and reduce intergroup bias (see Hewstone et al., 2002 and Nelson, 2006 for an overview; Dovidio, Gaertner, Isen & Lowrance, 1995; Park & Judd, 2005). Many effective small group interventions are based on the concept of tolerance and acceptance of different worldviews, and employ significant others to disseminate the outcomes of these interventions (Bargal, 2004; Lewin, 1948; Staub, Pearlman, Gubin & Hagengimana, 2005). However, some problems with such approaches is that they often focus solely on individuals already low in

prejudice; they are unable to address the whole area of conflict; they do not last beyond the intervention period; or they risk reinforcing perceptions of group differences. Consequently, in the end the intervention may fail, and even a promising intervention may prove unrealistic in the face of powerful ethnic and racial categorisation or conflict (Bargal, 2004; Hewstone et al., 2002; Park & Judd, 2005; Rouhana & Bar-Tal, 1998).

Based on interventions utilising the effects of a significant other to spread tolerance (Bargal, 2004; Lewin, 1948; Staub et al., 2005), this paper reasons that this method could successfully be applied on a larger scale, that is, by looking at how fear can be counteracted through world leaders promoting tolerance in the general public in a context of existing, international conflicts (e.g., post-9/11 terrorism). In the present study Terror Management Theory (TMT) was employed by using the 9/11 events to elicit fear as well as presenting a speech by President Bush utilising the presidents' way of framing messages in a fearful time. The paper will use fear and threat interchangeably much in line with Schaller, Park and Mueller's (2003) discussion of fear and feelings of personal vulnerability to actual physical danger as a consequence of realistic threat. Fear in a context of war and conflict is closely linked to feelings of threat. Furthermore, tolerance in this paper is conceptualised as a positive orientation towards members of other groups, a general orientation toward humanism and empathy implying political rights of expression and political participation for everyone. To set the stage for the design of the present study, TMT as a mechanism to instilling fear will be described prior to examining the effects of leader speechmaking on promoting tolerance versus maintaining fear in the general public.

### *Terror management theory and links to prejudice*

Terror management Theory (TMT) provides a cohesive explanation of the effects of fear of death on a wide array of inter-group phenomena. TMT addresses the fundamental conflict between the desire to survive and mortality (e.g. Arndt, Greenberg, Solomon, Pyszczynski & Simon, 1997; Pyszczynski, Solomon & Greenberg, 2003). According to TMT, when people are confronted with a threat that elicits a fear of death, they will react with defence mechanisms in order to ward off this death anxiety. Typically this involves restricting one's model of reality to those which provide consistency, structure and benign order (e.g., Arndt et al., 1997; Cohen, Solomon, Maxfield, Pyszczynski & Greenberg, 2004; Heine, Hatihara & Niiya, 2002; Klass, 2005; Landau, Greenberg, Pyszczynski, Martens, Goldenberg & Solomon, 2004; Landau, Solomon, Jeff, Cohen, Pyszczynski, Arndt, Miller, Ogilvie, &

Cook, 2004; Yum & Schenck-Hamlin, 2005). These defensive mechanisms are played out through defending constructed worldviews and the meaningful reality these worldviews provide. Thus, when experiencing death anxiety, people are more likely to protect cultural icons which in turn bolsters self-esteem and staves off anxiety (Arndt et al., 1997; Cohen et al., 2004; Heine et al., 2002). The reactions of the elicited fear may also be expressed through adherence to cultural norms, as a means of upholding the importance of one's cultural worldview. For example, pro-social behaviour may operate as a defence mechanism after death is made salient (Jonas, Schimel, Greenberg & Pyszczynski, 2002; Kumagai & Ohbuchi, 2002) or, importantly for the present study, through prejudice against those who do not share one's worldview.

Prejudice is a widespread response to the threat of death as feelings of fear often leads the individual to show an inclination to avoid what is different. Derogation allows individuals to discredit the threat posed by an outgroup's differing worldview, thus leaving one's own worldview unshaken. Furthermore, the act of attributing stereotypic traits allows individuals to verify their social reality, thus confirming the cultural conception of reality. Conformity to cultural standards is a way of creating a sense of immortality and meaning even after the unavoidable death, because it expresses the belonging to the shared everlasting culture. Common manifestations of prejudice include maintaining rigid and negatively stereotypes outgroups, which gives rise to nationalism and derogation of others (Schaller et al., 2003; Schimel, Simon, Greenberg, Pyszczynski, Solomon, Waxmonsky, & Arndt, 1999). Numerous studies have examined the role of prejudice in response to death anxiety. In one illustrative study, Schimel et al. (1999) demonstrated that asking participants to consider their own death (a well-validated mortality salience (MS) prime), increased dislike of out-groups and concomitantly increased the ascription of stereotypic traits to those groups. McGregor et al. (1998) studied the effects of fear of death on extreme acts of violence and war, and demonstrated that both aggression against and derogation of a target serve terror management functions. Thus, in the context of fear of death and war, people will likely turn to prejudice, derogation, and aggression. Furthermore, TMT has shown that people increase affection and evaluations of charismatic leaders in times of uncertainty and fear, which is kept salient by constant reminders of death (Cohen et al., 2005). Importantly, it has been repeatedly demonstrated that none of these MS effects are mediated by level of affect. Rather, they are the direct effect of the heightened sense of mortality (e.g. Arndt et al., 1997; Landau et al., 2004).



Studies on TMT have convincingly demonstrated that to produce mortality salience effects, fear needs to be at an implicit, or distal, level (Pyszczynski et al., 1999; Pyszczynski et al., 2003; Simon, Greenberg, Harmon-Jones, Solomon, Pyszczynski, Arndt, & Abend, 1997). The theory thus posits a “dual terror management model” in which terror management can be expressed through either immediate (proximal) or long-term (distal) defence mechanisms. Based on cognitive-experiential self-theory (CEST) (see e.g., Epstein, Lipson, Holstein & Huh, 1992; Kirkpatrick & Epstein, 1992), two distinct cognitive systems are considered to operate in the human mind that have implications for how people handle the threat of death: a rational and logical cognitive system, and an emotional and automatic system. When mortality is made salient in a very explicit manner – and people are therefore aware of it – people employ proximal defence mechanisms in which they consciously deal with death-related thoughts in a way that minimizes or eliminates the need for defence or rumination. Thus, explicit threats of death trigger the logical cognitive system to manage death anxiety in ways proximal to the situation at hand (Landau et al., 2004; Simon et al., 1997). In contrast, when mortality is made salient in an implicit manner – and people are therefore unaware of it – people protect the self from mortality concerns with the distal, often emotional, defence mechanisms of defending one’s worldview. This enables a subconscious sense of immortality that eases the subconscious threat of death (Arndt, Greenberg & Cook, 2002). Methodologically, the activation of distal defence mechanisms emerge both when the MS stimulus is given subliminally or if an MS prime retreats from consciousness after a delay or distraction task (Arndt et al., 2002; Greenberg, Pyszczynski, Solomon, Simon & Breus, 1994; Pyszczynski et al., 1999). The distal mechanisms of the emotional system are argued to exert more influence on social behaviour than do the intellectually-based beliefs of the former system (Simon et al., 1997), likely because cues of death during daily life are typically elicited outside of awareness. In a context of prolonged conflicts it is likely that the basis of a more emotional-based implicit fear is continuously present.

In most experimental studies of TMT, fear of death is induced by asking participants to write about their own death, after which the effects of MS are tested. Pyszczynski et al. (2003) argue that the events of 9/11 could be described as a real-world MS prime. In the aftermath of 9/11, Americans displayed a vast array of classic distal defence mechanisms, such as patriotic and nationalistic reactions. Presumably, 9/11 was a stark reminder of mortality, and people strove to take comfort in strengthening their worldviews (see also Yum & Schenck-Hamlin, 2005). Recently, research has begun to confirm the validity of real-world events as MS elicitors. Across four studies, Landau et al. (2004) found that using 9/11 as the

MS prime elicited the same effects as the standard method in reaching the distal defence level and thus engender MS effects. Thus, this illustrates the ecological validity of TMT. Other studies provide evidence that a 9/11 MS prime resulted in terror management reactions and coping strategies (Klass, 2005; Yum & Schenck-Hamlin, 2005).

Nonetheless, the extent to which real-world events elicit MS effects in the same manner as hypothetical ones remains unclear. Although the use of real-world events is commendable, the aforementioned studies did not include a non-mortality salience control group that matched the fear level of the 9/11 prime. For example, in the studies conducted by Landau et al. (2004), control groups wrote about either an upcoming exam or feelings of pain (e.g., the thought of going to the dentist). However, these sources of potential fear are qualitatively different from the events of 9/11, and would seem to arouse a different type of fear unrelated to death, possibly at lower levels, not discussed by the authors and which has also been a point of criticism (Ryan & Deci, 2004). The present study aims to replicate the findings of Landau et al. (2004), but with a more representative control group prime: economic crisis and difficulties in finding work. Employment is a significant concern to most people – perhaps particularly for college students who endure a level of uncertainty about their future employment and income – and is also a common theme in media. As such, it is a source of fear which in realism is similar to that of 9/11. At the same time, thoughts of economic crisis are not expected to elicit thoughts of death, allowing for an unconfounded comparison to the 9/11 MS prime (Landau et al., 2004; Pyszczynski et al., 2003).

Although research on TMT has also shown expression of defence mechanism in pro-social behaviour, the present study focuses on prejudice as a defence mechanism, in line with Landau et al. (2004). This decision is also consistent with the war and terrorism context of the present study, where reactions that hamper reconciliation work are often rooted in prejudice and fear.

### *9/11 and President Bush: Fear versus tolerance*

When confronted with terror and war, uncertainty and the emotion of fear contaminate reactions to political events (Glaser & Salovey, 1998; Jost, Glaser, Kruglanski & Sulloway, 2003; Simon et al., 1997; see also Lavine, Lodge & Freitas, 2005). People tend to unite behind and increase their support of the person in power, regardless of political orientation (Chanley, 2002; Landau et al., 2004; Willer, 2004). At the same time, people may become more susceptible to prescriptive messages given by authority figures during times of

heightened perceived threat (Perrin, 2005). This illustrates the power of the leader in certain situations, and opens up the possibility for exploitation by those in power (see Cohen et al., 2005; Fischhoff, Gonzales, Lerner & Small, 2005; Willer, 2004). Exploitation by those in power is achieved by manipulating people's perceptions of events, the information they are privy to, and, importantly, the emotions they are led to experience. Notably, perceived threats and fear directly influence policy preferences. Under low levels of threat, people prefer pacifist policy, and are influenced by logic as well as emotions. Under high threat, the decision making process is predominantly emotional and people become more politically intolerant, a phenomena that has been demonstrated in the context of Terror Management Theory (Gordon & Arian, 2001; Marcus et al., 1995; Skitka et al., 2004). Furthermore, this pattern is not only descriptive of people in general, also of those in power (Suedfeld & Leighton, 2002).

Given the links between emotion and policy preferences, it is critical to more fully understand fear in political contexts and ways to counteract fear-based prejudice. Evidence from the TMT literature offers one promising avenue: promoting tolerance during public communication. Several lines of theory and research support this prediction. First, as maintaining faith in one's worldview is a core response to MS primes, those who espouse tolerance as central to their worldview – such as liberals – should cling to this ideal when faced with death anxiety. Indeed, studies show that liberals accentuate their tolerant worldviews after MS primes (Greenberg, Simon, Pyszczynski, Solomon & Chatel, 1992; Skitka et al., 2004). This may seem to contrast with research on support for President Bush and 9/11, which showed an overall conservative shift, even for liberals (Cohen, 2005; Landau et al., 2004). They explained this shift in political orientation as a function of change in cognitive-emotional needs, such as the need to manage threat and uncertainty, which often leads to a rigid way of looking at the world. Jost (2006), on the other hand, reported that after 9/11, liberals showed a tendency to avoid dogmatic reactions. At first blush, these findings may seem contradictory. One possible explanation might be that different kinds of fear have been captured. However, important for the present study and applicable to the above mentioned findings, Greenberg et al. (1992) demonstrated that making tolerance salient mitigated the tendency for also conservatives to derogate others.

Taken together, then, research implies that promoting the notion of tolerance can reduce prejudice even in cases where peace seems improbable. This line of thinking is also evident in the reconciliation literature (Bargal, 2004; Maoz, 2005; Park & Judd, 2005; Staub, 2004). However, as previously mentioned effective and lasting results inductions of tolerance

are typically limited to studies conducted on small groups. It is difficult to produce lasting results in large groups such as an entire nation. In light of this problem, the present study sought to identify a way to increase tolerance and reduce prejudice in a large body of individuals. Paralleling Bargal (2004), the crucial role of the national leader was considered in terms of shaping public opinion. Leaders provide a means of reaching out to an entire nation and, in many cases, a way to define and legitimise political agendas. The behaviour and effects of the leader, therefore, may represent a mechanism to implement tolerance even at a large scale.

The link between leadership and promoting tolerance may lie in the tone of the leader's communication, and its effects on people's worldview. Through communication, leaders have a powerful capacity to shape the national worldview as either based on tolerance or intolerance. For example, during political addresses, leaders may either perpetuate fear about terrorism through rumination on the dangers of terrorism, or reduce fear by emphasizing security or tolerance for others. It is therefore reasonable to hypothesize that the effects of fear would shift depending on the perspective adopted in political rhetoric. According to Marcus et al. (1995), and as detailed above, emotions are integral to acceptance or rejections of tolerance; when threatened, people feel less inclined toward political tolerance and become increasingly prejudiced. Consequently, emphasizing notions of tolerance during communication would increase openness, political flexibility and reduce prejudice towards outgroups. The present study will address the dynamics between fear, threat and portrayals of reality (worldview) during leader's communication. Ultimately, there may be important implications for contexts of severe conflict, as the combination of the leader and tolerance may be a powerful and important tool for peace-making.

Thus, in line with the reasoning laid out so far, the following research questions were asked; (1) Using real-world primes for all conditions in the TMT paradigm, to what extent will it replicate earlier findings? (2) What impact does the leader have on his or her own people in terms of affecting fear and prejudice?

### *The Present study*

The threatening salience of death during war and terrorist events such as 9/11 can readily fuel prejudice and violence toward outgroups. However, given research showing that individuals cling fast to worldviews when mortality is salient, it is plausible that prejudice and violence can be combated by making tolerance a central component of one's worldview.

Since leaders hold particular sway over public opinion during war and terrorism contexts, a leader's communication of tolerance may be an effective means of promoting tolerance beliefs, thereby reducing the tendency toward prejudice. Contrarily, when a leader's communication instead focuses on fear, this prejudice may be exacerbated.

The present study was thus designed to test the impact of a leader's tolerance versus fearful communication after mortality salience on fear and prejudice. Similar to Lavine et al. (2005), the Terror Management Theory paradigm was used to manipulate situational threat, utilising the 9/11 prime from prior research to evoke mortality salience (Landau et al., 1994), TMT would predict that to the extent that death and fear are made salient, distal defence mechanisms will follow. Accordingly, the treatment groups were expected to demonstrate a mortality salience (MS) effect expressed by worldview defences, in this study measured by prejudice level, relative to the control group. Furthermore, previous literature shows that expressive displays emitted by a powerful political leader and presented on television, have a strong impact on viewers (McHugo, Lanzetta, Sullivan, Mastos & Englis, 1985). Thus, three clips from actual speeches delivered by President Bush were used to manipulate type of communication by a leader – tolerant, fearful, or neutral. It was thus assumed that after viewing a video where the President expresses tolerant attitudes towards another culture with which the Americans are in conflict (in the present study Muslims), worldview defence via implicit prejudice would be weaker than after viewing a video where the President expresses concerns about terrorism.

The current study looks at implications of MS manipulations. The experiment was designed with two phases. The first phase was designed to elicit fear. In order to not simply replicate previous studies on TMT, the present study added a second phase intended to moderate MS levels. Thus, the second phase aimed at influencing the elicited fear through the communicative framing used by President Bush. In this vein, three matters in the present study are noteworthy. Firstly, the study utilised a control prime (economic crisis) that more closely matched the real world and the 9/11 prime than what has been done before. Furthermore, previous studies on TMT have reported that affect level has not been raised (e.g. Arndt et al., 1997; Landau et al., 2004). However, it seems quite possible for affect to be raised, particularly fear and hostility in the context of terror, given the more complex level the real world represents. Both fear and hostility are common reactions when threatened (Bar-Tal, 2001; Ottati, Terkildsen & Hubbard, 1997). Although Landau et al. (2004) did not find differences in affect after participants had been induced with the 9/11 prime, it is believed in the present study that it warrants further investigation, much in line with critiques raised about

TMT and its implications for real world events (Crocker & Nuer, 2004; Leary & Schreindorfer, 1997). Finally, the study will address two different directions based on the effects from the MS manipulation. If indeed MS effects on prejudice are elicited, it will be interesting to see how the communication by President Bush influences the level of prejudice. If no MS effects are found, the second part constitutes a study in itself where the impact of a leader in reducing or enhancing fear and creating tolerance is tested. The aim of the study is therefore twofold; (1) to test the applicability of TMT on real-world events, and (2) to explore ways of reducing fear and its consequences by way of communication.

## Method

### *Participants*

One hundred and five undergraduate students (47 male, 58 female) enrolled in Psychology courses at the University of California, Berkeley, participated in return for partial course credit in the Spring semester 2006. The median age was 20 years. In the sample, 7 (6.7%) were African-Americans, 8 (7.6%) were Latinos, 42 (40%) were Asian-Americans, 35 (33.3%) were Caucasian, 3 (2.9%) were Middle Eastern and 10 (9.5%) identified as Other. 6% categorised themselves as Republican, 44% as Democrat, 18% as other liberal affiliations, and 32% did not provide an answer. All of the participants reported having been in the US on September 11, 2001, and 15 (14.3%) of them reported that either close family, distant family, or friends were directly hurt by the 9/11 incidents.

### *Procedure*

The study was run in a computer lab where the participants were seated in separate booths. The participants were told that the study was being conducted in order to gain insight about thoughts and feelings. The entire experiment was conducted on the computer, and the participants wore headsets for the duration of the session. They were randomly assigned to one of three conditions: a control group, a terrorism-focused group, or a tolerance group. In phase one the terrorism-focused and tolerance groups were collapsed and received the same manipulation. As with prior TMT research, participants first provided basic demographic information: age, gender, education, religion, and socio-economic background. Other demographic information that could potentially confound the study was gathered at the end of

the study: ethnicity, friendship, place of birth and political affiliation. At this point, participants also answered three questions about forgiveness related to 9/11 and the attacks: whether they had been in the United States at the time, and whether someone close to them had been hurt during the attacks. After the first set of demographic questions, participants were asked to complete the 16-item Social Dominance Orientation (SDO) questionnaire (Pratto, Sidanius, Stallworth & Malle, 1994), followed by the MS manipulation. The participants then read a short literary passage (Florette, personal communication, November 22, 2005) to serve as a delay to allow for the distal effects of the MS prime to become activated. They subsequently responded to a self-report mood scale, the PANAS-X (Watson & Clarke, 1991). As a manipulation check of the MS prime, the participants were assessed on attitudes toward aggressive counterterrorism before watching a video sequence of President Bush. After rating different nationalities and religious denominations on a thermometer scale (Weisberg & Rusk, 1970) they completed an implicit measure on attitudes toward Muslims, the GNAT (Nosek & Banaji, 2001). Finally, they were reassessed on the SDO scale and the Fear and Hostility PANAS-X subscales and given the last set of demographic questions.

### *Measures*

*Social Dominance Orientation.* Participants completed the Social Dominance Orientation (SDO, Pratto et al., 1994) 16-item scale prior to both manipulations as a measure of prejudice through endorsement of inequality (see Appendix A for a complete list of all the scales and questionnaires in the experiment). SDO was reassessed at the end using an abridged 8-item version of the 16-item scale. Both the 16-item and the 8-item SDO questionnaire reproduced good internal reliability, as in previous research, respectively  $\alpha = .92$ , and  $\alpha = .88$ . The two measures were highly correlated ( $r = .87, p < .001$ ).

*Mortality salience manipulation.* The two experimental conditions (terrorism-focused and tolerance) received identical MS manipulations. They responded to two open-ended questions (Landau et al., 2004): “Please describe the emotions that the thought of the terrorist attacks on September 11, 2001, arouses in you” and “Write down as specifically as you can what happened during the terrorist attacks on September 11, 2001.” Control participants responded to two questions that were parallel in form but that were not intended to elicit thoughts of death: “Please describe the emotions that the thought of not finding work after graduating, arouses in you” and “Write down as specifically as you can what will happen if you have trouble earning enough money after graduating.”

*Mood assessment.* In keeping with the work of Greenberg and colleagues (Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, & Lyon, 1990; Greenberg et al., 1994; Pyszczynski, Greenberg, Solomon, Cather, Gat & Sideris, 1995), all participants completed a self-report mood scale, namely, the PANAS-X following the MS induction (Watson & Clarke, 1991). Participants completed eight relevant subscales of this measure: Fear ( $\alpha = .84$ ), Hostility ( $\alpha = .85$ ), Sadness ( $\alpha = .85$ ), Guilt ( $\alpha = .89$ ), Joviality ( $\alpha = .90$ ), Self-Assurance ( $\alpha = .77$ ), Attentiveness ( $\alpha = .74$ ), Serenity ( $\alpha = .82$ ). The Fear and Hostility subscales were of particular interest for the present study, and were assessed again at the end of the study, and will be referred to as pre-communication and post-communication measures.

*Assessment of attitudes toward aggressive counterterrorism.* To assess endorsement of aggressive counterterrorism, participants first read an editorial expressing support for aggressive counterterrorism to prevent terrorism (see Landau et al., 2004), then completed items indicating the extent to which they agreed or disagreed with the editorial. The participants were told that the editorial appeared in the New York Times. It stated the following:

It is in the interest of safety for the people of our country that we must report all suspicious activities we come across; we must not allow our desire to be "politically correct" to hinder our ability to recognize the possibility of danger. The attacks on our country on September 11, 2001, and most recently the bombings in London, have shown the world what the terrorists are capable of. We must not be afraid to make accusations against people of other ethnicities because of the possibility they may be invalid; this is a small price to pay in order to effectively fight the war against terrorism. We have the capability to protect our country from future attacks, but only if every potential threat is taken seriously. As Americans, it is necessary to follow our National Security Policy if we want to avoid another attack on our country.

Four questions assessed level of agreement with the editorial: *"To what extent do you agree with this paragraph?"* *"To what extent do you share the attitudes expressed in the above paragraph?"* *"To win this war on terrorism, it is unavoidable that some ethnic groups from time to time may experience some discrimination,"* and *"Since the September 11th terrorist attacks, some law enforcement agencies have stopped and searched people because they are Arab or of Middle Eastern descent to see if they may be involved in potential terrorist*



*activities. Do you approve or disapprove of this kind of profiling?"* Responses were made on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The responses to the questions demonstrated good internal reliability ( $\alpha = .88$ ) and were therefore combined to generate a composite agreement score.

*Video manipulation.* Participants were shown video sequences of President Bush addressing the country. All video clips were approximately 50 seconds long. In the terrorism-focused clip, the president emphasizes the danger of terrorism (e.g., conveys that terrorist attacks may strike at any time, at any place). In the tolerance clip, the president emphasizes the importance of remaining tolerant of others perceived as related to the terrorist attacks (e.g., conveys the message that being Muslim is not synonymous with being a terrorist). The control video clip depicted the president discussing economic difficulties unrelated to 9/11. President Bush's physical appearance was similar in all three videos, and the background was standardized.

*Explicit attitudes toward Outgroup Nationalities.* Participants reported their feelings about Iraqis, Americans, Muslims, Christians, African Americans, and Jews on a Feeling Thermometer Scale (Weisberg & Rusk, 1970) which asks participants to rate each group on a scale from 0 – 100 with an interval of 10. The Feeling Thermometer was given audiotatively.

*Measurement of implicit attitudes toward Muslims.* The Go/No-go Association Task (GNAT; see Nosek & Banaji, 2001 for details) was used to assess implicit, automatic attitudes toward Muslims. The GNAT measures an individual's implicit or non-conscious association between two concepts, such as "Muslim" and "good" or "bad". Reaction time is used as a measurement of this non-conscious association; it is theorised that judgments in this task are made too rapidly for conscious deliberation to be implicated

Two GNATs were administered, one assessing responses to the category "American" and one assessing responses to the category "Muslim". Each of the GNATs consisted of two blocks, one in which the category "American" (or "Muslim") was paired with the attribute "good," and another in which the same category ("American" or "Muslim") was paired with "bad." Fourteen practice trials were followed by forty experimental trials. The target category – "American" or "Muslim" – and the evaluative attribute – "good" or "bad" remained on the screen throughout the blocks to remind participants of the target category and the attribute.

Single stimulus items from the four groups (American names, Muslim names, positive words, and negative words – see Appendix B) were presented for categorization. Participants were allotted 600 ms in which to respond (Nosek and Banaji, 2001) by pressing the space bar as quickly as possible if the stimulus belonged to either the target category or attribute shown

on the screen (i.e., “go”), or to do nothing if the item did not belong (i.e., “no-go”). Participants were provided accuracy feedback after each trial, in the form of a red “X” for incorrect responses and a green “O” for correct responses.

Analyses were conducted using a sensitivity index ( $d'$ ), which is the ability to discriminate targets (signal) from distracters (noise).  $D'$  was calculated as the proportion of hits (correct “go” responses for signal items) minus the proportion of false alarms (incorrect “go” responses for noise items). A higher  $d'$  score designates a stronger association between the target category and the attribute, interpreted in terms of implicit or automatic attitude toward the target category.

## Results

### *Demographics*

No main effects or interactions of sex, ethnicity or 9/11 personal experience emerged during analyses, thus these factors are not considered further<sup>1</sup>.

### *MS manipulation*

First, the responses were tested on whether the counterterrorism measure differed as a function of communication conditions. No statistically significant differences emerged between the control group ( $M = 2.29$ ,  $SD = 1.02$ ), the terrorism-focused group ( $M = 2.46$ ,  $SD = 1.19$ ), and the tolerance group ( $M = 2.58$ ,  $SD = .86$ ) on either the composite index, nor for each item separately.

Next, the effects of the MS manipulation on self-reported fear given before the communication prime and at the end of the study were tested. A mixed-design analysis of variance (ANOVA) was performed with communication condition as the between-subjects variable, and the PANAS-X Fear subscales (pre- and post-communication prime) as the within-subjects (see table 1). No between-group differences were detected ( $F(2,102) = .17$ ,  $ns$ ). However, there was a within-subjects effect such that fear was significantly reduced from pre- to post-communication prime across all three groups ( $F(1, 102) = 35.97$ ,  $p < .001$ ). No interaction emerged.

The same mixed-design ANOVA was run on the PANAS-X Hostility subscale. Similar patterns emerged (see table 1). There were no between-group differences ( $F(2,102)$

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<sup>1</sup> Although patterns did not differ for Middle Eastern participants, as may have been predicted, this may be due to the very small number of Middle Eastern participants ( $n=3$ ).

= .53, *ns*), however there was a significant within-subjects effect such that hostility was significantly reduced for all three groups ( $F(1,102) = 15.65, p < .001$ ). Again, no interaction was detected.

For the remaining PANAS-X subscales using the different types of affect as the dependent variable (Sadness, Guilt, Joviality, Self-Assurance, Attentiveness, Serenity) no effects came out.

**Table 1 Means and standard deviations of the Fear and the Hostility PANAS-X subscales**

	Control (n=36)	Terrorism-focused (n=35)	Tolerance (n=34)
Fear 1	2.24 (0.87)	2.20 (0.78)	2.32 (0.85)
Fear 2	2.03 (0.89)	1.91 (0.77)	1.99 (0.75)
Hostility 1	1.92 (.72)	1.99 (.82)	2.14 (.81)
Hostility 2	1.79 (.70)	1.72 (.70)	1.87 (.76)

Note: Standard deviations are reported in parenthesis

### *Attitude*

A one-way ANOVA was run using the Temperature Scale as the dependent variable and the three group conditions as the independent variable. There were no significant effects found on this test.

Next the effects of the manipulation on post-manipulation SDO were explored. A one-way ANOVA revealed baseline condition differences on the 16-item SDO scale,  $F(2,102) = 2.92, p < .058$ . Thus, responses on the 16-item SDO scale were controlled for during analyses of condition differences on the post-manipulation 8-item SDO scale. An ANCOVA, controlling for baseline SDO, revealed no main effect of condition on post-manipulation 8-item SDO,  $F(2,101) = .35, ns$ .

### *GNAT*

Seven participants were removed from GNAT analyses for making excessive errors ( $d' < 0$ ), indicating that they were either unable to recognise the correct stimuli, or were not following the instructions given. The total number of subjects for data analysis was therefore 98 (control group,  $n = 33$ , terrorism-focused group,  $n = 33$ , tolerance group,  $n = 32$ ).

To the extent that participants have a positive association with Muslims, performance should be reflected in a higher ability to jointly discriminate Muslim and good from distracters than when jointly discriminating Muslim and bad. A greater sensitivity designates

a stronger association between the target category and the attribute, and this measurement is defined as an automatic attitude toward the target category. To test this, a t-test was run using the d'prime mean (see Table 2 and Figure 1) for each pairing to explore the relationship between the pairings of interest. Subjects showed greater sensitivity (d') towards the pairings in the predicted direction as seen in table 3. Overall, there was a significantly stronger association between Muslim and bad than between American and bad. No differences were found between Muslim-good with American-good. Similarly, the association between Muslim-bad was stronger than the Muslim-good pairing. Furthermore, American-good was significantly stronger than the American-bad association. Taken as a whole, implicit attitudes were more negative toward Muslims than Americans.

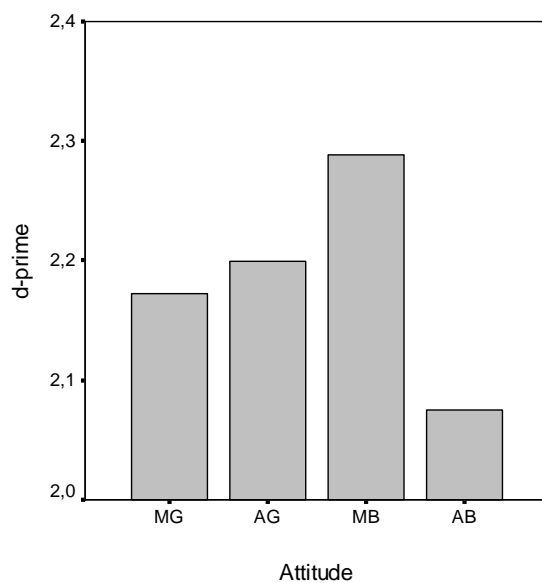
**Table 2 Overall d'prime for the Muslim and the American pairings**

	N	Mean
MG	98	2.17 (.71)
AG	98	2.20 (.69)
MB	98	2.29 (.69)
AB	98	2.08 (.64)

Note: Standard deviations are reported in parenthesis

MG = Muslim-good, AG = American-good, MB = Muslim-bad, AB = American-bad.

**Figure 1 Muslim and American pairings**



**Table 3 t-test exploring the relationship between the pairings**

	N	Mean difference	Sig. (2-tailed)
MG-AG	98	-.03 (.72)	.72
MB-AB	98	.21 (.55)	.000
MG-MB	98	-.12 (.66)	.08
AG-AB	98	.12 (.61)	.05
M-A	98	-.24 (.94)	.01

Note: Standard deviations are reported in parenthesis

Next, differences on  $d'$  as a function of condition were tested for (see Table 4). No significant differences between pairings were found when comparing all three conditions in an ANOVA, nor when conducting a contrast test of the two experimental conditions. The MG-MB showed an interesting pattern between the tolerance group ( $M = -.21$ ) and the control group ( $M = -.04$ ). Thus, further analysis was run for this pairing, as it also constitutes a simple difference on attitudes towards Muslims which is of main interest here. However, the t-test did not result in any significant differences,  $t(63) = -1.048$ , *ns*. Finally, an overall GNAT effect was assessed to test preference for Muslims, that is an overall American-good Muslim-bad attitude, (AG-MG) + (MB-AB). Again, no difference was found,  $F(2,95) = .04$ , *ns*.

There were small trends in these data of the tolerance group to demonstrate more negative associations towards Muslims, contrary to what was hypothesised. A one-way ANOVA controlling for baseline SDO was therefore performed, as the examination of the SDO level revealed a difference among the groups prior to any manipulation. This did, however, not alter the results in any significant way, MG-AG  $F(2, 98) = .46$ , *ns*, MB-AB  $F(2, 98) = .09$ , *ns*, MG-MB  $F(2, 98) = .25$ , *ns*, AG-AB  $F(2, 98) = .96$ , *ns*, M-A  $F(2, 98) = .17$ , *ns*. However, a regression analysis revealed that SDO was a direct predictor of negativity toward Muslims (MG-AG  $B = -.07$ , *ns*, MB-AB  $B = .022$ ,  $p = .04$ , MG-MB  $B = -.25$ ,  $p = .04$ , AG-AB  $B = .33$ , *ns*, M-A  $B = .29$ , *ns*). These results will be further examined in the discussion.

## Discussion

The present study set out to explore ways of counteracting the effects of fear in the context of war and terror using leader communication. The study also sought to test the applicability of Terror Management Theory to real-world events. The aim was to elicit fear with a 9/11 mortality salience induction and then reduce or enhance the fear through different

means of leadership communication. A methodological improvement of the present study was the use of a real-world control condition prime to more closely match the 9/11 primes.

Interestingly, the reported MS effects from previous studies were not replicated. The three conditions did not differ on subsequent measures of prejudice and aggressive counterterrorism. Furthermore, it seems that fear and hostility were raised in the participants to a certain degree which would have implications for the results. Secondly, no results were significant for the communicative manipulation for both explicit and implicit measures. In the following, implications will be addressed and possible explanations for these results will be presented.

### *TMT and the present study*

A considerable number of studies on TMT demonstrate that eliciting fear of death will lead to consequences such as increased prejudice. The theory aims to address and explain a wide variety of domains within human psychological functioning. Of particular interest to the present discussion are the studies conducted by Landau et al. (2004), Yum and Schenck-Hamlin (2005) and Klass (2005), who all used a similar 9/11 prime to elicit thoughts of death (as opposed to the traditional manipulation of writing about one's own death). Landau et al. (2004) concluded that 9/11 is associated with thoughts of death which is sufficient to elicit MS effects. The same pattern was not true for the control groups who were asked to describe either watching television (study 1), an upcoming exam (study 3) or write about pain (study 4). Although the aforementioned studies using 9/11 as the prime produced significant terror management outcomes the present study did not. Several reasons seem plausible.

### *Proximal and distal defences*

Past research has shown that affect measured by the PANAS-X scale (Watson & Clarke, 1991), that is conscious affect, is typically not raised to a notable degree after the MS prime and is therefore not likely to be the cause of the MS effects (Landau et al, 2004). However, the present study found elevated levels of both fear and hostility and did not map onto the reported findings from the TMT literature. Before continuing in more depth, it is prudent to point out that the low sample size (n=36) may have resulted in low power, and one should therefore be cautious when interpreting the results (Cohen, 1988). However, these

results may nevertheless point to trends in the data. Thus, it seems that the manipulations elicited changes in conscious emotionality.

First, this may explain why the present study did not replicate the traditional impact of 9/11 primes on prejudice. According to TMT, to be able to produce MS effects, the distal system of defence has to be active (Arndt et al., 2002; Pyszczynski et al., 1999; Simon et al., 1997), suggesting that fear and hostility should not have been consciously activated. Using real-world events that are so vivid and present might possibly make it difficult to suppress fear so that it would not reach the distal, unconscious level which is necessary to elicit MS effects, but remain at the more explicit level captured by the PANAS-X scale. Largely supported by Yum and Schenk-Hamlin (2005), Pyszczynski et al. (2003) identified four types of proximal actions: 1) Shock and disbelief, 2) diversion of attention, 3) withdrawal, and 4) undermining one self. Likewise, six distal actions were identified: 1) Search for meaning and value, 2) patriotism and nationalistic expressions, 3) the less tolerance, the more hostility and prejudice, 4) counter-prejudice activity, 5) increased altruistic behaviour, and 6) appreciation of heroes. Although a full content analysis was not done on the open ended responses, a closer look at the answers written by the participants on the 9/11 prime in the present study seems to indicate that the prime was so explicitly emotional that the participants may not have simply pushed thoughts of death into their distal subconscious. As a result, the descriptions are predominantly categorised as proximal. For instance,

*“During September 11, I was anxious about what would happen next because the attacks were a surprise so none of us knew when it could happen again.”*

*“I couldn't believe it. I was in shock.”*

*“Disbelief, detached.”*

*“Fear, anger, and distrust.”*

*“Well, I was in my first period class, run by a very emotional teacher. The second the notice came across the intercom, she screamed and started crying - which evidently had a traumatic affect on the class. As such, I was overcome by a feeling of dismay more than anything else. How could this have happened? Honestly? Are out current restrictions that relaxed that so much could get out of hand [sic.]? Apparently. Certainly, sorrow and remorse were factors in the emotional turmoil, but shock was first and foremost among my own.”*

*“The attacks on September 11, 2001 aroused the emotions of fear and disgust within me. I was thoroughly outraged at the thought that a group could mass*

*murder innocent people. I was also afraid about future events and was unsure of national security at the time."*

Thus, participants seemed to experience heightened feelings of fear as captured by the Fear PANAS-X subscale, preventing the activation of the distal defence system necessary to demonstrate TMT effects. Notably only four participants in the present study reported to deal with terrorism by giving up on ones freedom, that is, category 4 in Pyszczynski et al.'s (2003) proximal action taxonomy, for instance by agreeing to the massive post-9/11 federal-level measures undertaken to investigate and secure the nation (see also Yum & Schenck-Hamlin, 2005). The present study did focus on these actions both through the editorial and the four questions given right after and through the video sequence of President Bush. Accordingly, the study would therefore not be able to trace any effects of the 9/11 prime because these federal-level actions were not the way potentially MS affected participants would express themselves to reduce the threat. If providing participants with a preferred coping mechanism option, which also would have given the participants the opportunity to ward off the fear that had been raised, the MS effects might have been activated, as in Landau et al.'s (2004) study.

That so few responses were found for the fourth category in the taxonomy may furthermore be traced back to the fact that the participants were students from the University of California, Berkeley, a university known for its liberal position. In fact, only 6% of the participants reported to be Republicans. Consistently, Jost (2006) notes that liberals in general have turned their backs on dogmatic reactions to 9/11 and its political aftermath. Thus, even though it should be kept in mind that the 9/11 events constituted an attack on America, an America which, according to Jost (2006), seen in a historical perspective has been dominated by a republican orientation, the sample was made up of liberal Berkeley students, making it harder to evoke reactions in line with President Bush's politics. Moreover, Yum and Schenck-Hamlin (2005) discuss how 9/11 would produce increased levels of distal defences such as less tolerant and greater hostility in relation to the 9/11 prime, that is category 3 in Pyszczynski et al.'s (2003) distal action taxonomy. However, this is not necessarily the only way of reacting to threat. Today, 9/11 is also associated in the media and politics with a sentiment of tolerance and anti bigotry. Accordingly, Greenberg et al. (1992) suggest that tolerance fronted by public figures eliminates the effects of MS, which would be in line with Marcus et al.'s (1995) notion that emphasising tolerance increase openness and reduce prejudice. Furthermore, Friedman and Arndt (2005) found support for the role of cognitive consistency in terror management. This takes place only for those who adhere to the particular



values of the culture that are made salient, in line with the idea that every individual has their own personalised version of the cultural worldview (Landau et al., 2004).

It is also possible that after crises are over, people have a natural tendency to draw on positive emotions, and this coping mechanism includes reducing the feeling of terror and uncertainty through culturally valued behaviours (Fredrickson, Tugade, Waugh & Larkin, 2003; Yum & Schenck-Hamlin, 2005). This line of thinking fits with the findings reported by Skitka et al. (2004), wherein feelings of fear may also lead one to strive to become a better person. Finally, Roseman, Abelson and Ewing (1986) discuss how people experiencing fear seem to be attracted to hopeful appeals in an effort to reduce fear and thus avoid something worse. This provides the individual with a feeling of taking action which could solve the problem. In sum then, if tolerance is an important value, commonly linked to liberalism, and evident in the present sample, prejudice and racism should not be elicited by a mortality salience prime. This may not hold true for the American population as a whole since the aspect of a worldview activated by threat depends not only on the context, but also on individual differences<sup>2</sup>. That is, individuals vary in which images are associated with thoughts of death (Arndt et al., 2002). In fact, Ford, Udry, Gleiter, and Chantala (2003) report how the salience of the 9/11 events resulted in significantly higher levels of governmental trust at federal, state and local levels, whereas Perrin (2005) found evidence showing how the west American population expressed significantly higher levels of anti-authoritarianism contrary to the rest of the country. Furthermore, according to Perrin (2005) the political discourse shows a parallel picture. The discourse became in general more intolerant. However, a competing

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<sup>2</sup> Given the focus on fear and threat in the present study, traits such as authoritarianism, belief in a dangerous world, feelings of uncertainty and self esteem may play an important role in the expression of prejudice after a reminder of one's mortality. Studies support such predictions. For instance, Lavine et al. (2005) reported that threat induced by a MS prime led high authoritarians to select attitude-congruent information, whereas this trait was purported to be cognitively and motivationally dormant under low threat contexts. They interpreted this finding as a threat-related predisposition. Consequently, the degree of expressed political resentment would depend on the level of social threat. This is consistent with Pyszczynski, Greenberg and Solomon's (1997) reasoning that the specific motive chosen is an interaction of dispositions, socialisation and an individual's unique psychological constitution. Additionally, Greenberg et al. (1990) found that under threat, authoritarians rated persons with dissimilar social attitudes more negatively, explained as a defensive way of coping with threat. There is also much support in the TMT literature on the role of self-esteem as a buffer against threat, and increasing people's situational self-esteem may be an important element in opening up for tolerance. It is theorised that self-esteem is raised whenever one complies with a valued worldview, and in the process acknowledges one self as a part of the culture (Arndt, Greenberg, Schimel, Pyszczynski & Solomon, 2002; Pyszczynski, Greenberg, Solomon, Arndt & Schimel, 2004; Solomon, Greenberg & Pyszczynski, 2000). Furthermore, being high on trait self-esteem acts as a buffer against threat (Greenberg, Pyszczynski, Solomon, Pinel, Simon & Jordan, 1993; Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon & McGregor, 1997), which is also discussed by Ryan and Deci (2004). Likewise and closely related, Landau et al. (2004) showed that those in high need for structure increased their efforts to structure social reality. Although all the mentioned concepts are interesting in a context of threat, it is not possible to include them all in one study. However, they should be kept in mind for future studies.

discourse showed a significant rise in tolerance. These studies then, map nicely onto the patterns found in the present study.

### *Fear*

The points discussed above do not, however, explain why Landau et al. (2004) did not find raised fear<sup>3</sup> levels and thus found significant results when they likewise used 9/11 as MS. Presumably, participants had repressed their anxiety and defences were operating at the distal level. However, the authors did not report the actual data on their PANAS-X analysis, which makes interpretation difficult. Perhaps there actually were differences in emotional arousal for the different groups that emerged to a greater degree in the present study. Furthermore, Landau et al. (2004) did not take repeated measures of the PANAS-X scale that could have shown possible changes in emotion throughout the studies. Based on the present study it cannot be concluded whether there are qualitative differences in the fear felt by the control group versus the MS manipulated groups (terrorism-focused and tolerance). One possibility in the present study may be that both the control prime and the MS prime raised feelings of a fear linked to uncertainty. According to Landau et al. (2004; see also Friedman & Arndt, 2005), uncertainty does not parallel the effects of MS and would therefore not result in any MS effects which is the pattern seen in the current study. Perhaps the fear that is raised in the present study in the control condition parallels the fear raised in the experimental condition and captures qualities of the fear that Landau et al. (2004) were not able to depict in their design. This idea would be in line with the interesting discussion by Leary and Schreindorfer (1997), which questions the assumption that all effects found are explainable to existential threats as TMT claims. The quality of fear will be further discussed later in the discussion.

### *Impact of the Leader*

The above discussions on fear and tolerance examined in relation to TMT, have implications for the prejudice findings of the present study. Again, there were no significant results for the explicit measures. Several explanations are plausible. First of all, too little fear may have been elicited in this experimental, laboratory setting to be captured by the explicit tasks given after the communication by the President. Furthermore, previously it was

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<sup>3</sup> The hostility level followed the same pattern as the fear level and will not be discussed further as fear has been the main focus in the present study. However, the role of hostility should be kept in mind for future studies.

discussed that fear evoked by the 9/11 prime was so vivid that the distal level was not reached and/or that no preferred coping mechanisms were provided to ward off any amount of fear initially elicited and captured by the PANAS-X scale. However, another plausible explanation is that the fear may have diminished before the communication manipulation was administered. This would particularly be true if the 9/11 prime evoked pre-existing personal beliefs in tolerance so that any fear elicited by the MS prime was presumably handled by not adhering to the prejudice implied in the questions they were confronted with following the MS prime. This is not the same as providing participants with a delay in which fear is suppressed and MS effects are thus engaged. Consequently, the participants in the terrorism-focused group may already have found a way, namely through tolerance in line with holding a liberal worldview, to ward off any fears that the speech otherwise could have kept stable or continued to raise. They would therefore be in no need of defending themselves in form of prejudice, also discussed by Pyszczynski, Greenberg, Solomon, Sideris & Stubing (1993), and there would not be any differences between the groups. Furthermore, it is plausible that no results were found on explicit scales due to social desirability concerns (Fazio, Jackson, Dunton & Williams, 1995).

### *Social Dominance Orientation*

According to Pratto et al. (1994), SDO is an intergroup phenomenon that correlates with any potent prejudiced worldview or ideology, and is thus a significant predictor of political attitudes towards intergroup relations. Furthermore, Duckitt and Fisher (2003) point out that threatening situations seem to increase social dominance. In sum then, SDO would be able to catch any effect produced by threat or tolerance inducing manipulations. Importantly, SDO is also shown to be negatively correlated with tolerance (Pratto et al., 1994). For these reasons, a measure of SDO was included in the present study, both pre- and post-manipulations. It was predicted that SDO should both be controlled for when exploring the effects of manipulations on prejudice, as well as considered as a predictor in its own right.

However, and in line with Yum and Schenck-Hamlin's conclusion (2005), although individual differences may matter for less powerful MS primes, the magnitude of existential terror and the vividness of the 9/11 events should outweigh any potential individual differences. Instead it may make more sense to devote effort toward group level actions, such as pro-social behaviour. If pro-social behaviour and values are an important aspect of the cultural worldview, behaviour in line with these worldviews would presumably provide more

comfort and sense of meaning than expressing personal traits of social dominance. In line with this, the results from the present study lend support to Yum and Schenck-Hamlin (2005); SDO scores did not change after the manipulations. This result may also be explained in other ways. First of all, although the participants showed differences in SDO levels prior to any manipulation, this did not seem to affect the data. Secondly, the overall low level of SDO ( $M = 2.83$  on a 7 point scale) is in line with that most participants leaned toward a liberal orientation. Considering that tolerance and empathy are negatively correlated with SDO, while conservatism is positively correlated with SDO (Pratto et al., 1994), the inability of the manipulations to impact SDO scores seems reasonable. Finally, the stability of SDO responses may also demonstrate participants' ability to control their responses to explicit tests, and/or social desirability concerns.

### *GNAT*

One way to circumvent social desirability concerns is to administer implicit measures of the construct of interest. Thus, in the present study, a reaction-time measure of prejudice, the GNAT, was administered. However, the GNAT data also failed to produce significant results, except that SDO predicted implicit prejudice toward Muslims, independent of condition. Specifically, bearing in mind that these results were not significant, the means from the ANOVA analysis might suggest that the tolerance group shows the strongest tendency of negative associations of the Muslims. This could be explained by the fact that the tolerance group already before any manipulation showed a significantly higher level of SDO<sup>4</sup>.

Two final explanations for lack of significant effects merit attention. Firstly, Landau et al. (2004) conducted their study much closer in time to 2001, making it likely that the 9/11 MS would exert a stronger effect. Quite simply, the manipulation may no longer have the capacity to elicit fear and thoughts of death. As a downstream consequence, the subsequent

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<sup>4</sup> Furthermore, as indicated earlier, the control group did not receive a manipulation related to 9/11 and while the tolerance group listened to a speech where the word Muslim were mentioned, this was not true for the control group. This could have led to the different trend between especially the control group and the tolerance group. Moreover, even though close attention was paid on finding real world speeches given by President Bush in the same setting (addressing the Union) and that were comparatively similar in words, dress code and length, this proved to be a difficult task. This meant that also the terrorism-focused group did not hear President Bush in his intolerant speech briefly mention Muslim but Afghanistan. Therefore, it is quite possible that the terrorism-focused group either shows a correction effect if one may in this context lump Muslim and Afghanistan in the same category, especially given the highly liberal sample, or if this is not prudent, that mentioning Afghanistan for this liberal group taken the view liberals holds of the war in Afghanistan, leads to stronger opposite attitudes towards President Bush and his politics. The sum result for any one of these two explanations would be a tendency for the participants to show lower and matching levels of negativity towards Muslims. This correction, however, would not be needed for the tolerance group, as the frame was tolerance.

speech would likewise have little impact. It thus remains unclear how and to what degree differently framed leader communications can shape effects following a highly threatening or terrifying event, such as terrorist attacks. Secondly, the liberal leanings of the sample suggest the possibility that participants closed themselves off to the leader's speech, as the leader in this study was a conservative Republican, President Bush. This interpretation is supported by the fact that, during the weeks the experiment was run, several demonstrations in the San Francisco area and in the states in general were held against President Bush and the Iraqi war, and during the Spring semester of 2006 the support for the President reached it's at the time lowest support. That is, participants may simply not have believed in the President's messages, be it his fear inducing communication or his sincerity in emphasizing tolerance. Thus it is important to determine whether the effects would emerge with a more conservative sample, which may include places with severe levels of fear and conflict as one tends to become less flexible and tolerant and more conservative in threatening environments (Bar-Tal, 2001; Isen et al., 1987; Lavine et al., 2005; Rouhana & Bar-Tal, 1998; Shamir & Sagiv-Schiftler, 2006).

### *Caveats*

A few limitations warrant attention. In all prior studies using TMT, the present one included, the treatment group was asked about a past incident, while the control group was asked about a possible future event. This may be problematic, as it is possible that experienced events elicit stronger and possibly qualitatively different types of fear than hypothetical future events. This may preclude a direct comparison between the control and experimental conditions. Future designs using real-world events should consider this limitation. Furthermore, although it was not possible within the scope of the present study, the ideal design would have been a design where the treatment groups would have also been exposed to the speech of the economical scenario and, likewise, that the control group would have been exposed to both the fear and the tolerance inducing speeches. This would have made it possible to explore the nature of the fear to a greater degree. Furthermore, even though randomisation was applied, the data on SDO at baseline revealed that the groups indeed were significantly different from each other regardless of the randomisation. However, analysis controlling for the SDO difference in the present study showed that this difference did not alter the results in the study in any significant way. Nonetheless, this is a weakness to be considered.

Turning to the implicit measurement, a few limitations should be brought to attention. First of all, to comply with the frame and the intention of the research questions, the words chosen in the GNAT had connotations to politically laden images either in a positive or negative direction (e.g., “enemy“ and “democratic“, see Appendix B). In fact, these words themselves may have activated in everyone the need to counteract terror and war (a chronic value of liberalism) which contributed to less biased responses across all conditions. Furthermore, in relation to a discussion around the use of implicit measurements, these tests often require several trials to be able to catch anything going on as the measurement is very sensitive. In the present study, participants reported feeling overloaded and that the GNAT (which took about 15 minutes to finish) was a strenuous and tiresome task to complete. These reports were also confirmed by the experimenter and could be seen in how participants carried out the task. Lack of motivation among the participants is thus something to bear in mind when using such methods, as it could hamper the data collected.

Correspondingly, it should be noted that critics expression caution when interpreting data from implicit tests (e.g. Kihlstrom, 2004), as they are a specific type of attitude and not directly comparable to explicit attitudes. However, Plant and Devine (1998) and Vargas, von Hippel and Petty (2004) draw attention to how explicit and implicit measures tap into different and complimentary aspects of attitude expressions. Coupled with the fact that explicit measurements have a tendency to elicit socially desirable responses (Fazio et al., 1995; Vargas et al., 2004), it is meaningful to administer both types of tests to gain a fuller understanding of the psychology of attitudes and prejudice (Nosek and Banaji, 2001).

### *Future Directions*

*Threat and tolerance.* The results of the study do not necessarily undermine Terror Management theory. Nonetheless, this paper does question the validity of previous TMT studies that lack realism in their choice of mortality salience manipulations. This is critical when trying to understand the implications of death anxiety during real events such as war and terrorism. Arguably, it may be impossible to truly re-enact the variety of fear found in war and conflicts in a lab setting at all. Future studies would benefit from a design focusing more specifically on the role of fear in contexts of war and conflict, as even the non significant results reported here raise intriguing questions. The role of the leader in a context of threat, the impact of the threat level, the content of the threat, and to what degree direct contact versus media reports of threat situations influence differently ought to be further

investigated (Cottrell & Neuberg, 2005; Gordon & Arian, 2001). Another interesting direction for future research would be to consider the nature of different conflicts and contextual factors influencing, for instance resource dispute, ideology and contrasting values (Ybarra & Ramón, 2004). In this context, the role of tolerance seems to stand out. The present study, in line with Allport, (1954), Greenberg et al. (1992), Lewin (1948), Park and Judd (2005), and Pratto et al. (1994), emphasizes the importance of tolerance, a reaction pattern opposite to that of prejudice, which may be elicited after mortality is made salient. However, in the real world, especially in places dominated by fear, it is not certain how easy it is to prime tolerance in liberals positioned at a moderate or less level (Gordon & Arian, 2001). Although non-conclusive results were reported here, this should not be taken to imply that tolerance is not an effective remedy against prejudice. The highly relevant relationship between fear and tolerance would gain from further exploration, with improved methodology. In line with this notion, one future TMT design should be to include both prejudice measures and tolerance measures in order to test whether MS effects are not elicited in those who hold tolerant views, which might be the case in the present study<sup>5</sup>.

*Affect.* Turning to the role of affect, findings in the present study suggest that the quality of the experienced fear when utilising real-world events should be addressed, especially since Greenberg et al. (1994) convincingly argue that any MS effects are due to being confronted with death, and not fear in general. Typically, a TMT study will therefore not show increased affect. However, affect was raised in the present study, which has also been reported in previous research (van den Bos & Miedema, 2000), and the content of the fear seems to warrant further inquiry. Moreover, it would be interesting to see what type of fear the control prime elicits compared to the treatment group and what this might have of implications for TMT. This would be in line with Pratto et al.'s (1994) argumentation. For instance, they contend that racism and political-economic conservatism are spuriously correlated due to the fact that both concepts are driven by social dominance orientation, and would therefore show similar patterns, which would be consistent with the present study. According to Cottrell and Neuberg (2005) there is a diversity of expression modes and actions

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<sup>5</sup> On this note the concept of tolerance in the context of fear and threat should be questioned to a greater degree. Marcus et al. (1995) pose a set of relevant questions when they propose that the level of tolerance is relative and affected by the level of the fear level. A solution against this seems to be emphasising commitment to democratic norms. This remedy is closely linked to the role of affect versus cognition, as their findings suggest that a "sober second thought" lead to a stronger tolerance commitment than when acting on emotions. Herein, then, we find an interesting question – how can one increase tolerance in highly threatening environments where emotions dominate and asking for thoughtful cognition would be a very difficult task? Further knowledge on this would be of importance for many of the situations we face today.

dependent on the context within each of the general concepts of prejudice and threat, and the information this provides would be lost if one focuses exclusively on the global level of prejudice. Thus, it may be argued that the SDO level present in the control condition is based on a qualitatively different fear compared with the two other conditions, which would be in alignment with the discussion above on TMT, type of prime and the quality of fear. Likewise, it would be interesting to determine if the reduced hostility level for the treatment groups observed in the present study would show the same pattern in a context where the conflict and fear levels between two groups are considerably higher than in the present context. As well, effects may differ if participants have personally endured a history of victimization.

### *Final Remarks*

War and terror set the scene for the present study. However, reconciliation has been the primary motivational force underlying this work. This study specifically sought to explore ways to raise tolerance even during a state of fear, by drawing on perceptions of social reality and the role of the leader in shaping reality. The questions of war and peace and the dynamics of politics and the leader are a complicated and comprehensive field which warrants continued research. The root of the complexity is found in the culture and the context, which both are important in shaping our worldviews, our emotions, cognitions, behaviours, and judgments (Arndt et al., 2002; Blass, 1991; Keltner & Haidt, 1997; Lazarus, 1991; Lerner & Keltner, 2001; Sidanius, 1988). The nature of real-world intergroup relations is multifaceted, especially those found in conflict zones. Social-psychological variables blend in with history, economics, politics and ideology, providing ideas and myths, which in turn create a collective and powerful memory (Bar-Tal, 2001; Lira, 2001). These processes play a crucial part by contributing to conflicts being trapped in vicious cycles of death, destruction and cognitive distortion. Although no conclusive support was found for the hypothesis of the present study, the role of tolerance as expressed by leaders is still a field that warrants further attention in the area of conflict studies. Tolerance may be a first step towards reconciliation, fostering trust and positive affect, which in turn enables individuals to address guilt and build forgiveness (Bargal, 2004; Carnevale & Isen, 1986; Dovidio et al., 1995; Hewstone et al., 2002; Isen, Niedenthal & Cantor, 1992; Rouhana & Bar-Tal, 1998; Thompson, Snyder, Hoffman, Michael, Rasmussen, Billings, Heinze, Neufeld, Shorey, Roberts & Roberts, 2005; Staub et al., 2005).



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## Appendix A

### Scales and Questions in Order

#### Demographics

- 1) Please enter your age
- 2) What is your gender?
- 3) What is your highest level of education?
- 4) What is your Mother's highest level of education?
- 5) What is your Father's highest level of education?
- 6) What is your religious denomination?
- 7) Where would you place your parents on the following spectrum for social class?

1=First year; 2=Second year; 3=Third year; 4=Fourth year; 5=Fifth year and beyond

1=Some High School; 2=High School; 3=Some College; 4=College Degree; 5=Post Graduate Degree

1=Working Class; 2=Lower Middle Class; 3=Middle Class; 4=Upper Middle Class; 5=Upper Class

#### Social Dominance Orientation 16-item Scale (Pratto et al., 1994)

- 1) Some groups of people are simply inferior to other groups.
- 2) In getting what you want, it is sometimes necessary to use force against other groups.
- 3) It is okay if some groups have more of a chance in life than others.
- 4) To get ahead in life, it is sometimes necessary to step on other groups.
- 5) If certain groups stayed in their place, we would have fewer problems.
- 6) It's probably a good thing that certain groups are at the top and other groups are at the bottom.
- 7) Inferior groups should stay in their place.
- 8) Sometimes other groups must be kept in their place.
- 9) It would be good if groups could be equal.
- 10) Group equality should be our ideal.
- 11) All groups should be given an equal chance in life.
- 12) We should do what we can to equalize conditions for different groups.
- 13) Increased social equality.
- 14) We would have fewer problems if we treated people more equally.
- 15) We should strive to make incomes as equal as possible.
- 16) No one group should dominate in society.

1=very negative; 2=; 3=; 4=neutral; 5=; 6=; 7=very positive

#### MS Terrorism for tolerance and terrorism-focused groups (Landau et al., 2004)

- 1) Please describe the emotions that the thought of the terrorist attacks on September 11, 2001, arouses in you.
- 2) Write down as specifically as you can what happened during the terrorist attacks on September 11, 2001.

#### MS Control

- 1) Please describe the emotions that the thought of not finding work after graduating, arouses in you.
- 2) Write down as specifically as you can what will happen if you have trouble earning enough money after graduating.

#### Delay Essay (Florette, personal communication, November 22, 2005)

Please read the following short passage from a novel and answer the following questions. The automobile swung clumsily around the curve in the red sandstone trail, now a mass of mud. The headlights suddenly picked out in the night, first on one side of the road, then on the other two wooden huts with sheet metal roofs. On the right near the second one, a tower of course beams could be made out in the light fog. From the top of the tower, a metal cable, invisible at its starting-point, shone as it sloped down into the light from the car before disappearing behind the embankment that blocked the road. The car slowed down and stopped a few yards from the huts. The man who emerged from the seat to the right of the driver laboured to extricate himself from the car. As he stood up, his huge, broad frame lurched a little. In the shadow beside the car, solidly planted on the ground and weighed down by fatigue, he seemed to be listening to the idling motor. Then he walked in the direction of the embankment and entered the cone of light from the headlights. He stopped at the top of the slope, his broad back outlined against the darkness. After a moment he turned around. In the light from the dashboard he could see the chauffeur's black face, smiling. The man signalled and the chauffeur turned off the motor. At once a vast cool silence fell over the trail and the forest. Then the sound of the water could be heard. The man looked at the river below him, visible solely as a broad dark motion flecked with occasional shimmers. A denser motionless darkness, far beyond, must be the other bank. By looking fixedly, however, one could see on that still bank a yellowish light like an oil lamp in the distance. The big man turned back toward the car and nodded. The chauffeur switched off the lights, turned them on again, then blinked them regularly. On the embankment the man appeared and disappeared, taller and more massive each time he came back to life.

Suddenly, on the other bank of the river, a lantern held up by an invisible arm swayed back and forth several times. At a final signal from the lookout, the man disappeared into the night. With the lights out, the river was shining intermittently. On each side of the road, the dark masses of forest foliage stood out against the sky and seemed very near. The fine rain that had soaked the trail an hour earlier was still hovering in the warm air, intensifying the silence and immobility of this broad clearing in the virgin forest. In the black sky misty stars flickered.

### Delay questions

1) How do you feel about the overall descriptive qualities of the story?

1=not at all descriptive; 2=; 3=; 4=somewhat descriptive; 5=; 6=; 7=very descriptive

2) Do you think the author of this story is male or female?

1=male; 2=female

### PANAS X (Watson & Clarke, 1991)

1) disgusted	H
2) scornful	H
3) irritable	H
4) angry	H
5) hostile	H
6) loathing	H
7) shaky	F
8) afraid	F
9) nervous	F
10) jittery	F
11) scared	F
12) frightened	F
13) cheerful	J
14) delighted	J
15) happy	J
16) joyful	J
17) excited	J
18) lively	J
19) enthusiastic	J
20) energetic	J
21) disgusted with self	G
22) guilty	G
23) ashamed	G
24) angry at self	G
25) blameworthy	G
26) dissatisfied with self	G
27) attentive	A
28) alert	A
29) determined	A
30) concentrating	A
31) daring	SA
32) strong	SA
33) fearless	SA
34) bold	SA
35) proud	SA
36) confident	SA
37) relaxed	SE
38) calm	SE
39) at ease	SE
40) sad	S
41) alone	S
42) blue	S
43) lonely	S
44) downhearted	S

1=very slightly; 2=a little; 3=moderately; 4=quite a bit; 5=extremely

Fear (F), Sadness (S), Hostility (H), Guilty (G), Joviality (J), Self-Assurance (SA), Attentiveness (A), Serenity (SE).

Racial bias

- 1) To what extent do you agree with this paragraph?
- 2) To what extent do you share the attitudes expressed in the above paragraph?
- 3) To win this war on terrorism, it is unavoidable that some ethnic groups from time to time may experience some discrimination.

1=strongly disagree; 3=neutral; 5=strongly agree

- 4) Since the September 11th terrorist attacks, some law enforcement agencies have stopped and searched people because they are Arab or of Middle Eastern descent to see if they may be involved in potential terrorist activities. Do you approve or disapprove of this kind of profiling?

1=strongly disagree; 2=; 3=neutral; 4=; 5=strongly agree

Thermometer (Weisberg & Rusk, 1970)

Now you will complete a task called the feeling thermometer.

When I read aloud the name of a group, I would like you to specify a number between 0 and 100 to rate your feelings about that group. The higher the number, the warmer or more favourable you feel toward that group. The lower the number, the colder or less favourable you feel toward that group. If you feel neutral towards a group, that is, neither warm nor cold, give them a rating at the 50 degree mark.

Allow your gut feelings to guide your responses.

- 1) Using the feeling thermometer, how would you rate your view of Iraqis?
- 2) Using the feeling thermometer, how would you rate your view of Americans?
- 3) Using the feeling thermometer, how would you rate your view of Muslims?
- 4) Using the feeling thermometer, how would you rate your view of Christians?
- 5) Using the feeling thermometer, how would you rate your view of African Americans?
- 6) Using the feeling thermometer, how would you rate your view of Jews?

1=0; 2=10; 3=20; 4=30; 5=40; 6=50; 7=60; 8=70; 9=80; 10=90; 11=100

Social Dominance Orientation 8-item Scale (Pratto et al., 1994)

- 1) Some groups of people are simply inferior to other groups.
- 2) It is okay if some groups have more of a chance in life than others.
- 3) To get ahead in life, it is sometimes necessary to step on other groups.
- 4) Inferior groups should stay in their place.
- 5) Group equality should be our ideal.
- 6) We should do what we can to equalize conditions for different groups.
- 7) Increased social equality.
- 8) We would have fewer problems if we treated people more equally.

1=very negative; 2=; 3=; 4=neutral; 5=; 6=; 7=very positive

Fear and hostility PANAS-X subscales (Watson & Clarke, 1991)

- 1) disgusted
- 2) scornful
- 3) irritable
- 4) angry
- 5) hostile
- 6) loathing
- 7) shaky
- 8) afraid
- 9) nervous
- 10) jittery
- 11) scared
- 12) frightened

1=very slightly; 2=a little; 3=moderately; 4=quite a bit; 5=extremely

Final questionsForgiveness

- 1) Is it possible to forgive an act that leads to consequences such as those found after a terrorist attack?
- 2) Do you think the actions of the terrorists on September 11th are reflective of their culture?
- 3) Do you think Muslim beliefs helped spur the actions of the terrorists on September 11th?

1=Yes; 2=No

**Ethnicity**

1) How do you define your ethnicity?

1=African-Am; 2=Latino; 3=Asian-Am.; 4=European-Am.; 5=Middle Eastern; 6=Other

**Friends**

1) Do you have friends whom you would describe as coming from another ethnic group than yourself? (Yes or No)

2) If Yes, from which ethnic group(s)?

**Birth place**

1) Where were you born?

**Political affiliation**

1) What is your political party affiliation?

**London bombings**

1) Have you heard about the bombings of London on July 7th and July 21st?

1=Yes; 2=No

**Bomb location**

1) Where were you on the eleventh of September, 2001?

1=In New York; 2=In the States; 3=Abroad

**Attack connections**

1) Were you personally or someone close to you hurt in the terrorist attack on the eleventh of September, 2001?

1=Personally; 2=Close Family; 3=Distant family; 4=Friend(s); 5=None

**Experiment**

1) Did anything strike you as unusual in today's study?

**Study purpose**

1) What do you think the purpose of today's study was?

## Appendix B

Names, and good words and bad words in the GNAT test (Nosek & Banaji, 2001).

### Muslim names

Ali  
Ahmad  
Salim  
Hazem  
Hajim  
Rashid  
Zuhair  
Lakdhar  
Mohamed  
Ibrahim

### American names

Bob  
Roger  
Harry  
Steve  
David  
Chris  
Donald  
Robert  
Michael  
Matthew

### Good words

Beautiful  
Cheerful  
Glad  
Happy  
Joyful  
Laughing  
Loving  
Smiling  
Wonderful  
Likable  
Peaceful  
Democratic  
Trustworthy  
Honest  
Free  
Intelligent  
Friend  
Nice  
Harmless  
Tolerant

### Bad words

Dislike  
Disgusting  
Dirty  
Unpleasant  
Hate  
Nasty  
Ugly  
Sickening  
Gross  
Horrible  
Aggressive  
Authoritarian  
Untrustworthy  
Dishonest  
Repressive  
Stupid  
Enemy  
Evil  
Dangerous  
Brutal

### Neutral background and contrast words

(Part of the GNAT design, but in the present study not of importance, but see Nosek & Banaji, 2001 for details.)

Table  
Door  
Month  
Contents  
Context